REMARKS

Claims 1, 3-12, 14, 16, 20, 21, and 34-43 are pending. Claims 2, 13, 15, 17-19, and 22-33 have been canceled. Claims 3-10 and 34-36 have been withdrawn. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claims 1 and 37 have been amended to recite that "a second withstand voltage per unit thickness of the organic layer is 3×10^6 V/cm or greater, the second withstand voltage being calculated by dividing the first withstand voltage by the thickness of the organic layer." Support for this amendment is found, for example, in the paragraph beginning at page 39, line 27. Also, claim 37 has been amended to recite that the ratio Xa between the backward bias voltage Vr and the organic layer thickness Da is 2.2×10^6 V/cm or greater. Support for this amendment is found, for example, in the paragraph beginning at page 36, line 9, and in FIG. 7.

Claims 1 and 37 were rejected under 35 USC 112, second paragraph, as being indefinite. The applicants respectfully request that this rejection be withdrawn for the following reasons.

It is asserted in the office action that there is no definition of how the electric field intensity is calculated. Original claims 1 and 37 were intended to convey that when a voltage equal to the withstand voltage is applied across the organic layer by the lower and upper electrodes, the electric field intensity appears in the organic layer. That is, the electric field intensity corresponds to a withstand voltage per unit thickness of the organic layer. To clarify this, original claims 1 and 37 have been amended to replace "the withstand voltage" with a "first withstand voltage." Also, "the electric intensity" has been replaced by a "second withstand voltage." The first withstand voltage is a withstand voltage of the entire organic layer. The

second withstand voltage is a withstand voltage per unit thickness of the organic layer. Therefore, the second withstand voltage is calculated by dividing the first withstand voltage by the thickness of the organic layer.

The office action states that it is unclear how the upper electrode thickness Da in claim 1 relates to the electric field intensity. Consequently, the examiner interprets Da to be the organic layer thickness. The examiner is improperly interpreting Da to be the organic layer thickness instead of the upper electrode thickness. The symbol Da in claim 1 represents the upper electrode thickness. Claim 1 recites that the ratio between the backward bias voltage Vr and the upper electrode thickness Da is 2.2×10^6 V/cm or greater. As described in the paragraph beginning at page 10, line 19 of the specification, the ratio Vr/Da of 2.2×10^6 V/cm or greater is necessary for the self-healing property to be achieved.

The office action questions why claims 1 and 37 do not require that the backward bias voltage be required for determining the electric field intensity. As discussed above, the electric field intensity is the second withstand voltage per unit thickness of the organic layer and is required for determining the first withstand voltage of the entire organic layer. The backward bias voltage is equal to or less than the first withstand voltage. Therefore, the backward bias voltage is not required for determining the electric field intensity (the second withstand voltage).

In the explanation of the section 112 rejection in the office action, it is also said that claim 37 also appears to require two mutually exclusive conditions. This results from the improper interpretation of Da as the organic layer thickness. As mentioned above, Da represents the upper electrode thickness.

To summarize, the following are true:

a) the backward bias voltage is less than or equal to the first withstand voltage;

b) the first withstand voltage is equal to the organic layer thickness multiplied by the second withstand voltage;

c) the second withstand voltage is greater than or equal to 3×10^6 V/cm; and

d) the backward bias voltage divided by the upper electrode thickness is greater than or equal to 2.2×10^6 V/cm.

For these reasons, the applicants respectfully request that the section 112 rejection be withdrawn.

Claims 1, 11, 12, 14, 16, 20, and 37-42 were rejected under 35 USC 102(b) as being anticipated by Yamazaki '152. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claims 1 and 37 recite that the ratio Vr/Da between the backward bias voltage Vr and the upper electrode thickness Da is 2.2×10^6 V/cm or greater. As described, for example, in the paragraph beginning at page 30, line 14, of the specification, the backward bias voltage directly acts on the organic layer and indirectly acts on the upper electrode. The self-healing property is exhibited, as shown in FIGS. 6B, 14A, and 14B.

Further, as described in the paragraph beginning at page 10, line 19 of the specification, the ratio Vr/Da of 2.2×10^6 V/cm or greater is necessary for the self-healing property to be achieved. When the ratio Vr/Da is equal to or greater than 2.2×10^6 V/cm, the upper electrode scatters and returns outward from the end portion of the defective portion K1 (See FIG. 14A). As a result, the space between the lower and upper electrodes becomes electrically open at this portion, and the defect does not advance any further into the surrounding area. Thus, self-healing is achieved.

In contrast, when the ratio Vr/Da is less than 2.2×10^6 V/cm, it is difficult for the upper electrode to scatter and self-repair. Yamazaki '152 does not show or suggest that the ratio Vr/Da of 2.2×10^6 V/cm or greater is necessary for self-healing to be achieved. Yamazaki '152 discloses that the thickness of the upper electrode (cathode) is 400nm (See para. 0137) and 50 nm (See para. 0165). Also, Yamazaki '152 discloses that the backward (reverse) bias voltage is 5 volts (See para. 01660) and 6.5 volts (See para. 0169). However, the ratio Vr/Da in Yamazaki '152 is less than 2.2×10^6 V/cm. For example, when the backward bias voltage is 6.5 volts and the thickness of the upper electrode is 50nm, the ratio Vr/Da is 1.3×10^6 V/cm. Therefore, it is difficult for the upper electrode to scatter and self-repair. Accordingly, it is requested that the rejections of claims 1 and 37 be withdrawn.

Further, claims 11, 12, 14, 16, 20, and 38-42, which depends from claim 1 or 37, are considered to be patentable over Yamazaki '152 for the reasons given above with respect to claims 1 and 37.

Claims 21 and 43 were rejected under 35 USC 103(a) as being unpatentable over Yamazaki '152 in view of Wada '833. Claims 21 and 43 depend on claims 1 and 37, respectively. The patent to Wada '833 fails to supply what is missing in Yamazaki '152. Therefore, claims 21 and 43 are considered to be patentable for the reasons given above.

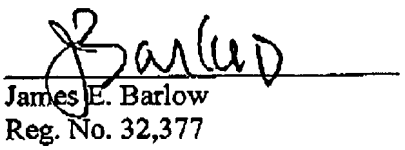
The applicants respectfully request that the withdrawn claims be rejoined on the basis that claim 1 is considered to be patentable for the reasons given above.

Entry of this amendment is respectfully requested because the amendment is considered to place the application in condition for allowance.

In view of the foregoing, the applicants submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

If there are any problems with the payment of fees, please charge any underpayments and credit any overpayments to Deposit Account No. 50-1147.

Respectfully submitted,



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